

What is claimed is:

1. A method of determining whether a conductive element of a probe is located adjacent to a characterized body tissue comprising the steps of:
  - a) applying an electrical signal to the conductive element;
  - b) determining characteristics of the applied signal, including a phase angle; and
  - c) determining whether the conductive element of a probe is located adjacent to a characterized body tissue based on the phase angle of the applied signal, wherein said characterized body tissue comprises one of cortical bone, cancellous bone, or cortical bone near the boundary with soft tissue.
2. The method of claim 1, wherein the determined characteristics of the signal include an impedance of the signal through the tissue.
3. The method of claim 1, wherein the probe comprises one of a cannula and a cathode.
4. The method of claim 1, wherein step a) applies signals having a range of predetermined frequencies to the conductive element.
5. The method of claim 1, wherein step c) includes determining whether the conductive element of a probe is located adjacent to said tissue based on the determined characteristics and frequency of the resulting signal.

6. The method of claim 1, wherein the conductive element is an electrode.
7. The method of claim 1, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
8. The method of claim 1, wherein the signal is an electrical signal having a sliding frequency.
9. An article of manufacture for use in determining whether a conductive element of a probe is located adjacent to a characterized body tissue, the article of manufacture comprising computer readable storage media including program logic embedded therein that causes control circuitry to perform the steps of:
  - a) applying a signal to the conductive element;
  - b) determining characteristics of the applied signal, including a phase angle; and
  - c) determining whether the conductive element of a probe is located adjacent to a characterized tissue based on the phase angle of the applied signal, wherein said characterized body tissue comprises one of cortical bone, cancellous bone, or cortical bone near the boundary with soft tissue.
10. The article of manufacture of claim 9, wherein the determined characteristics of the signal further include an impedance of the signal through the tissue.

11. The article of manufacture of claim 9, wherein the probe comprises one of a cannula and a cathode.
12. The article of manufacture of claim 9, wherein step a) applies signals having a range of predetermined frequencies to the conductive element.
13. The article of manufacture of claim 9, wherein step c) includes determining whether the conductive element of a probe is located adjacent to said tissue based on the determined characteristics and frequency of the resulting signal.
14. The article of manufacture of claim 9, wherein the conductive element is an electrode.
15. The article of manufacture of claim 9, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
16. The article of manufacture of claim 9, wherein the signal is an electrical signal having a sliding frequency.
17. An apparatus for use in determining whether a conductive element of a probe is located adjacent to a characterized body tissue, the apparatus including:
  - a) means for applying a signal to the conductive element;

- b) means for determining characteristics of the applied signal, including a phase angle of the signal; and
- c) means for determining whether the conductive element of a probe is located adjacent to a characterized body tissue based on the phase angle of the applied signal, wherein said characterized body tissue comprises one of cortical bone, cancellous bone, or cortical bone near the boundary with soft tissue.

18. The apparatus of claim 17, wherein the determined characteristics of the signal include an impedance of the signal through the tissue.

19. The apparatus of claim 17, wherein the probe comprises one of a cannula and a cathode.

20. The apparatus of claim 17, wherein means for applying a signal includes means for applying signals having a range of predetermined frequencies to the conductive element.

21. The apparatus of claim 17, wherein the means for determining whether the conductive element of a probe is located adjacent to said tissue includes means for determining whether the conductive element of a probe is located adjacent to said tissue based on the determined characteristics and frequency of the signal.

22. The apparatus of claim 17, wherein the conductive element is an electrode.
23. The apparatus of claim 17, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
24. The apparatus of claim 17, wherein the signal is an electrical signal having a sliding frequency.